

REMARKS

In the Office Action mailed on May 5, 2003, claims 19-23 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite; claims 6-18 were rejected under 35 USC § 102(e) as being anticipated by Bartley (U.S. Patent No. 6,219,796); claims 22-23 were rejected under 35 USC § 102(e) as being anticipated by Bartley; claims 24-36 were rejected under 35 USC § 102(e) as being anticipated by Bartley; claims 1-3 and 19 were rejected under 35 USC § 102(e) as being anticipated by Swanberg (U.S. Patent No. 5,832,280); claims 1-3 and 19 were rejected under 35 USC § 102(b) as being anticipated by Holzhammer et al. (U.S. Patent No. 5,754,869); claims 1-5 and 19-21 were rejected under 35 USC § 102(b) as being anticipated by Smith et al. (U.S. Patent No. 5,167,024). The foregoing rejections are respectfully traversed.

Claims 1-36 are pending in the subject application, of which claims 1, 4, 6, 9, 11, 14, 17, 19, 22, 24, 27, 29, 32, and 35 are independent.

Amendments to the Claims:

Claims 17, 18, 35, and 36 are canceled herein. Claims 19-22, and 24 are amended herein to reflect previous amendments to claims 1-4 and 6 (as a result, claims 1-16 and 19-34 differ only in the usage of the terms "means" and "unit") Claims 1-16 and 19-34 are amended herein to recite "a plurality of power control" means/units. Care has been exercised to avoid the introduction of new matter.

Support for the amendments to claims 1-16 and 19-34 may be found in the Specification at Figures 1-5, reference numbers 105, 107, 111, and 114, and the related discussion in the Specification.

Rejections of the Claims:

Rejections Under 35 U.S.C. § 112, second paragraph:

Claims 19 and 22 are amended herein, taking the examiner's comments into consideration and directed to overcoming the rejections. Specifically, the term "information processing apparatus" is replaced with the term "processor." The Applicant respectfully requests that the examiner withdraw the rejections thereto.

Rejections Under 35 U.S.C. § 102(e) – Bartley:

Bartley discusses CPU core 11 as being included within DSP processor 10 (Bartley, Fig. 1; col. 3, lines 40-48). Bartley's functional units are included within DSP processor 10, and are illustrated in Fig. 1 as being included in CPU core 11 (Bartley, col. 2, lines 1-6).

In the December 18, 2002 Amendment After Final Rejection, the Applicant argued that Bartley is restricted to the functional units being contained within the processor, regardless of whether the processor in Bartley is included within the CPU (Bartley, col. 6, lines 47-52). The Applicant further argued that in the claimed invention, the plurality of driving means/units is not included within a processor. Based on the Applicant's arguments, the examiner interpreted the claimed processor as referring to CPU 101 (as illustrated in Figure 1 of the subject application) (Office Action, p. 4). The examiner further read column 6, lines 47-52 of Bartley, which discusses the functional units being internal or external to CPU core 11, as anticipating the claimed invention that the plurality of driving means/units is not included in a processor.

However, the claimed processor differs from CPU core 11 of Bartley. Bartley describes only an on-chip environment, specifically, processor 10 and its functional units (Bartley, col. 2, lines 106, 33-37). CPU core 11 is exclusively included within processor 10 (Bartley, col. 2, lines 18-19; Fig. 1) and functions as a slave unit thereof. Further, as argued previously, the functional units in Bartley are only discussed as being included within processor 10, regardless of whether they are included within CPU core 11 (Bartley, col. 6, lines 47-52).

In contrast, in the present invention, the claimed processor refers to CPU 101, as illustrated in Figure 1. At best, CPU 101 is comparable to processor 10 of Bartley, but an important difference between the claimed invention and Bartley is that the plurality of driving means/units in the claimed invention is not included within CPU 101 (the processor, as claimed), while in Bartley, the functional units are always included within processor 10. In order to fully appreciate the difference, one must understand that while Bartley discusses CPU core 11 as an important element of processor 10 (because CPU core 11 may or may not contain the functional elements), the present invention does not expressly discuss a CPU core in CPU 101. Regardless, CPU 101 contains elements not specifically discussed in the Specification that are commonly understood to be included therein by those skilled in the art, and may include a CPU core in an embodiment, without being considered new matter. Therefore, Bartley does not disclose or suggest each and every element of the claimed invention.

Rejections Under 35 U.S.C. § 102(e) – Swanberg:

Swanberg does not disclose or suggest the claimed plurality of power control units and the claimed plurality of driving means/units. Specifically, as illustrated in Figure 1 of the subject application, each of the plurality of power control units, e.g., graphics board controller 114, HDD controller 105, sound board controller 111, and FDD controller 107 controls graphics board 112, HDD control board 117, sound board 109, and FDD control board 120, respectively (Specification, p. 7, line 23 – p. 9, line 20; Fig. 1). Claims 1 and 19 (as amended herein) positively recite both the plurality of power control units and the plurality of driving means/units.

In contrast, Swanberg only discusses keyboard mouse controller 80, DMA controller 86, display controller 98, parallel controller 102, CD-ROM controller 76, diskette controller 70, serial controller 88, and disk controller 66, which control keyboard 82, mouse 84, display 96, printer 100, CD-ROM 78, diskette 74, modem 92, and disk drive 72, respectively (Swanberg, Fig. 2; col. 4, line 57 – col. 6, line 16). Swanberg also discusses a single power management controller 136 to control modes of operation of the peripheral devices via the controllers.

Therefore, although Swanberg arguably discusses the plurality of driving means/units, i.e., the controllers, Swanberg does not disclose or suggest the claimed plurality of power control units. In fact, the examiner cites the peripheral devices of Swanberg as the plurality of driving means/units of the claimed invention (Office Action, p. 13). Obviously, the peripheral devices themselves do not anticipate either the plurality of driving means/units or the plurality of power control units of the claimed invention. Therefore, Swanberg does not disclose or suggest every element of the claimed invention.

Rejections Under 35 U.S.C. § 102(b) – Holzhammer:

In Holzhammer, each of a plurality of power management (PM) handlers 17 controls the power consumption of its own one of a plurality of device drivers 15 (Holzhammer, col. 3, lines 48-58). However, as illustrated in Figure 1 of Holzhammer, each PM handler 17 is physically located within its device driver 15 (Holzhammer, Fig. 1; col. 3, lines 44-46). Holzhammer does not disclose or suggest otherwise.

In the Office Action, the examiner asserted that Holzhammer discusses the possibility that the plurality of driving means/units is not included in a processor, because Holzhammer discusses external driving means, citing column 6, lines 17-22 and 37-42 and column 7, lines 38-42 (Office Action, p. 14). However, those sections of Holzhammer do not support the

examiner's assertion.

Specifically, Holzhammer indicates that “an additional portion of power is consumed in buses, chipsets and controllers that can be eliminated resulting in additional power savings. Such power consumption is distributed across the platform chipset, internal buses and controller devices” (Holzhammer, col. 6, lines 18-22) (emphasis added). Clearly, Holzhammer is describing an additional power consumption reduction that can be had by focusing on other elements of the processor, i.e., other elements such as chipsets, buses, and controllers that are included within the processor. Further, Holzhammer discusses that a bus controller may be external to the chipset (Holzhammer, col. 6, lines 37-42), but such a bus controller is clearly not one of the device drivers 15. In addition, Holzhammer also discusses “external buses such as a disk controller cards, multi-disk data buses and disk spindles” (Holzhammer, col. 7, lines 38-42), but Holzhammer does not describe any of the same as one of the device drivers 15. Therefore, because Holzhammer does not disclose or suggest that its device drivers 15 are not included within the processor, Holzhammer cannot anticipate each and every element of the claimed invention.

Rejections Under 35 U.S.C. § 102(b) – Smith:

Smith discusses a power manager within a portable laptop computer (Smith, Abstract).

Claims 1, 4, and 19 of the subject application (as amended herein) recite “a plurality of power control units.” In contrast, Smith does not disclose or suggest a plurality of control units. The device drivers in Smith are responsible for powering particular peripheral devices on and off (Smith, col. 9, lines 50-52). Smith discusses a single power manager that controls the device drivers (Smith, col. 3, lines 24-27).

Further, claims 1, 4, and 19 of the subject application (as amended herein) recite (using the language of claim 1 as an example) that the plurality of driving means “is not included in a processor.” Smith is implemented in a laptop computer (Smith, col. 3, lines 14-15). Therefore, the device drivers controlled by Smith's power manager are included within the laptop computer. However, Smith does not disclose or suggest that the driving means/units are not included in the processor.

Therefore, claims 1, 4, and 19 (as amended herein) patentably distinguish over Smith.

Combination of Swanberg and Holzhammer:

In addition, Swanberg cannot be combined with Holzhammer to render the claimed invention unpatentable under 35 U.S.C. § 103(a). Someone skilled in the art would not have combined Swanberg and Holzhammer because the two references are incompatible. Specifically, Swanberg discusses a single power controller, while Holzhammer discusses multiple power controllers.


Withdrawal of the foregoing rejections is respectfully requested.

There being no further objections or rejections, it is submitted that the application is in condition for allowance, which action is courteously requested. Finally, if there are any formal matters remaining after this response, the examiner is requested to telephone the undersigned to attend to these matters. If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 10-6-2003

By: 
Matthew Q. Ammon
Registration No. 50,346

1201 New York Avenue, N.W., Suite 700
Washington, D.C. 20005
(202) 434-1500